"Contains NO CBI" 8EHQ-92-12096
88920010334
INIT

UNION CARBIDE CORPORATION 39 OLD RIDGEBURY ROAD, DANBURY, CT 06817-0001

August 27, 1992

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

92 SEP -1 AM 11:40

Document Processing Center (TS-790)
Room L-100
Office of Toxic Substances
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

Attn: Section 8(e) Coordinator (CAP Agreement)

Re: CAP Agreement Identification No. 8ECAP-0110

Dear Sir or Madam:

Union Carbide Corporation ("Union Carbide") herewith submits the following report pursuant to the terms of the TSCA §8(e) Compliance Audit Program and Union Carbide's CAP Agreement dated August 14, 1991 (8ECAP-0110). This report describes acute toxicity studies with Silane 32-61 (silane, tris[(1,1-dimethylethyl)dioxy]ethenyl-; CASRN 15188-09-7).

"Silane 32-61: Range Finding Toxicity Studies", Mellon Institute, Special Report 32-61, May 21, 1969.

A complete summary of this report is attached.

Previous TSCA Section 8(e) or "FYI" Submission(s) related to this substance are:

(None)

Previous PMN submissions related to this substance are: (None)

This information is submitted in light of EPA's current guidance. Union Carbide does not necessarily agree that this information reasonably supports the conclusion that the subject chemical presents a substantial risk of injury to health or the environment.

32-61

RECEIVED 2/15/95

In the attached report the term "CONFIDENTIAL" may appear. This precautionary statement was for internal use at the time of issuance of the report. Confidentiality is hereby waived for purposes of the needs of the Agency in assessing health and safety information. The Agency is advised, however, that the publication rights to the contained information are the property of Union Carbide.

Yours truly,

William C. Kuryla, Ph.D.
Associate Director
Product Safety
(203/794-5230)

WCK/cr
Attachment (3 copies of cover letter, summary, and report)

# SUMMARY

Confidential
Special Report 32-61

R: 5-21-69

MELLON INSTITUTE
Chemical Hygiene Fellowship

Silane 32-61

Range Finding Toxicity Studies

Editor: J. S. Nycum
Contributors: N. I. Condra, E. R. Kinkead
For: UNION CARBIDE CORPORATION, Chemicals and Plastics Operations Division

## Summary

Stomach Intubation, rat - $LD_{50}$ = 1.87 ml./kg. undiluted.

Skin Penetration, rabbit - $LD_{50}$ = 0.071 ml./kg. undiluted; an ICC Class B poison.

Inhalation, rat -
Substantially saturated vapor evolved under static conditions at room temperature
1 hour killed 6 of 6
1/2 hour killed 5 of 6
1/4 hour killed 0 of 6

Uncovered Skin Irritation, rabbit - minor, Grade 4.

Eye Injury, rabbit - moderate, Grade 5.

Intraperitoneal Injection, rat - $LD_{50}$ = 1.07 ml./kg. undiluted.

## Interpretation

Silane 32-61 had moderate acute peroral toxicity to rats. It was highly toxic, an ICC Class B poison, by skin penetration to rabbits. It was well tolerated by rats upon intraperitoneal injection. The undiluted material resulted in minor irritation when applied uncovered to rabbit skin. When an excess of the undiluted material was instilled in rabbit eyes severe corneal injury resulted with erythema, pus, injection and hemorrhage of the lids noted. Moderate corneal injury resulted from 0.02 ml. while small droplets caused minor injury. Inhalation of substantially saturated vapor should be avoided as it may cause eye irritation and poor coordination within a few minutes. Longer exposures could be fatal.

Report A-5 Haw 5/27/69

R: 5-21-69

Confidential
Special Report 32-61
5 Pages

MELLON INSTITUTE
Chemical Hygiene Fellowship

# Silane 32-61

## Range Finding Toxicity Studies

Contributors: N. I. Condra, E. R. Kinkead
Editor: J. S. Nycum
For: UNION CARBIDE CORPORATION, Chemicals and Plastics Operations Division

AFDK (4) dermal $LD_{50}$ eye

## Summary

Stomach Intubation, rat - $LD_{50}$ = 1.87 ml./kg. undiluted.

Skin Penetration, rabbit - $LD_{50}$ = 0.071 ml./kg. undiluted; an ICC Class B poison.

Inhalation, rat -
Substantially saturated vapor evolved under static conditions at room temperature
1 hour killed 6 of 6
1/2 hour killed 5 of 6
1/4 hour killed 0 of 6

rapid death

Uncovered Skin Irritation, rabbit - minor, Grade 4.

Eye Injury, rabbit - moderate, Grade 5.

Intraperitoneal Injection, rat - $LD_{50}$ = 1.07 ml./kg. undiluted.

## Interpretation

Silane 32-61 had moderate acute peroral toxicity to rats. It was highly toxic, an ICC Class B poison, by skin penetration to rabbits. It was well tolerated by rats upon intraperitoneal injection. The undiluted material resulted in minor irritation when applied uncovered to rabbit skin. When an excess of the undiluted material was instilled in rabbit eyes severe corneal injury resulted with erythema, pus, injection and hemorrhage of the lids noted. Moderate corneal injury resulted from 0.02 ml. while small droplets caused minor injury. Inhalation of substantially saturated vapor should be avoided as it may cause eye irritation and poor coordination within a few minutes. Longer exposures could be fatal.

## Samples

Quantity: 50 ml.; 350 ml.
Dates Received: 7-19-68; 1-28-69
M. I. Sample Nos.: 31-230; 32-24
Submitted by: Y. L. Fan
Division: Chemicals and Plastics, Bound Brook, N. J.
Identification: None
Charge No.: 08055

Peroral, Single Dose to Rats

$LD_{50}$ - 1.87 (1.26 to 2.76) ml./kg. undiluted.

Conditions - standard.

| Dosage Ml./Kg. | Dead / Dosed | Days to Death | Weight Change | Signs and/or Symptoms |
|---|---|---|---|---|
| 4.0 | 5/5 | 1,1,1,1,1 | ——— | Prostrate shortly after dosing; fur ruffed. |
| 2.0 | 3/5 | 1,1,1 | ++ | |
| 1.0 | 0/5 | ——— | +++++ | |

Gross Pathology - Victims: congestion and "burned" appearance throughout the lungs, and the abdominal viscera.

Conclusions - moderate acute peroral toxicity.

Skin Penetration, Single Dose to Rabbits

$LD_{50}$ - 0.071 (0.0324 to 0.154) ml./kg. undiluted.

Conditions - standard; under VINYLITE covering.

| Dosage Ml./Kg. | Dead / Dosed | Days to Death | Weight Change | Skin Irritation | Signs and/or Symptoms |
|---|---|---|---|---|---|
| 0.1 | 3/4 | 1,1,1 | + | Necrosis. | ——— |
| 0.05 | 1/4 | 14 | ++++ | | |

Gross Pathology - congestion throughout the lungs, and the abdominal viscera. Liver dark and mottled with acini prominent; kidneys abnormally dark.

Conclusions - high acute toxicity by covered dermal application; an ICC Class B poison.

Inhalation, Single, by Rats

Conditions - standard Procedure B.

| Procedure | Time | Concentration | Dead / Dosed | Days to Death | Weight Change | Signs and/or Symptoms |
|---|---|---|---|---|---|---|
| B | 1 hr. | Substantially saturated vapor. | 6/6 | 0 | ——— | Irritation of eyes, lachrymation at 7 mins.; convulsions at 30 mins. |
| B | 1/2 hr. | Substantially saturated vapor. | 5/6 | 0,0,2,2,4 | + | Irritation of eyes at 5 mins. Poor coordination at 20 mins. |
| B | 1/4 hr. | Substantially saturated vapor. | 0/6 | ——— | ++++++ | Irritation of eyes at 5 mins. Poor coordination at 15 mins. |

Gross Pathology - Victims - blood in intestines; lungs brown in color.
Survivors - nothing remarkable.

Conclusions - inhalation of substantially saturated vapor should be avoided as it may cause eye irritation and poor coordination within a few minutes. Longer exposures could be fatal.

Skin Irritation, Rabbit, Uncovered

Conditions - standard.
Applied undiluted.

Conclusions - moderate to marked capillary injection on 3 animals and moderate to marked erythema on 2 others. Grade 4.

Eye Irritation, Rabbit

Conditions - standard.
Instilled undiluted.

Conclusions - an excess (0.5 ml.) caused severe corneal injury in 3 eyes with erythema, pus, injection and hemorrhage of the lids noted. Severe corneal injury also resulted from 0.02 ml. while 0.005 ml. caused moderate corneal injury. Grade 5.

## Parenteral, Single Dose to Rats

Intraperitoneal Injection
$LD_{50}$ - 1.07 (0.724 to 1.58) ml./kg. undiluted.

Conditions - male albino 120 to 215 gram rats.

| Dosage Ml./Kg. | Dead / Dosed | Days to Death | Weight Change | Signs and/or Symptoms |
|---|---|---|---|---|
| 2.0 | 5/5 | 1,1,1,1,1 | ——— | Prostrate at 5 minutes. |
| 1.0 | 2/5 | 1,1 | +++ | |
| 0.5 | 0/5 | ——— | +++++ | Very excitable with rapid breathing at 24 hours. |

Gross Pathology - Victims - congestion throughout the lungs, and the abdominal viscera.

Conclusions - well tolerated by intraperitoneal injection.

Judith S. Nycum, B.S.
Research Associate

Approved:

Charles P. Carpenter, Ph.D.
Administrative Fellow

Acknowledgments:

Skin Penetration, Irritation Tests — Naomi I. Condra, B.S., Junior Fellow

Inhalation Studies — Edwin R. Kinkead, B.S., Junior Fellow

Typed: May 23, 1969 - md

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

William C. Kuryla, Ph.D.
Associate Director, Product Safety
Union Carbide Corporation
39 Old Ridgebury Road
Danbury, Connecticut 06817-0001

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

APR 18 1995

EPA acknowledges the receipt of information submitted by your organization under Section 8(e) of the Toxic Substances Control Act (TSCA). For your reference, copies of the first page(s) of your submission(s) are enclosed and display the TSCA §8(e) Document Control Number (e.g., 8EHQ-00-0000) assigned by EPA to your submission(s). Please cite the assigned 8(e) number when submitting follow-up or supplemental information and refer to the reverse side of this page for "EPA Information Requests".

All TSCA 8(e) submissions are placed in the public files unless confidentiality is claimed according to the procedures outlined in Part X of EPA's TSCA §8(e) policy statement (43 FR 11110, March 16, 1978). Confidential submissions received pursuant to the TSCA §8(e) Compliance Audit Program (CAP) should already contain information supporting confidentiality claims. This information is required and should be submitted if not done so previously. To substantiate claims, submit responses to the questions in the enclosure "Support Information for Confidentiality Claims". This same enclosure is used to support confidentiality claims for non-CAP submissions.

Please address any further correspondence with the Agency related to this TSCA 8(e) submission to:

Document Processing Center (7407)
Attn: TSCA Section 8(e) Coordinator
Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency
Washington, D.C. 20460-0001

EPA looks forward to continued cooperation with your organization in its ongoing efforts to evaluate and manage potential risks posed by chemicals to health and the environment.

Sincerely,

Terry R. O'Bryan

Terry R. O'Bryan
Risk Analysis Branch

Enclosure

12096A

# Triage of 8(e) Submissions

Date sent to triage: APR 20 1995

NON-CAP (CAP)

Submission number: 120964

TSCA Inventory: (Y) N D

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Study type (circle appropriate):

Group 1 - Dick Clements (1 copy total)

ECO AQUATO

Group 2 - Ernie Falke (1 copy total)

(ATOX) SBTOX SEN (w/NEUR)

Group 3 - Elizabeth Margosches (1 copy each)

STOX CTOX EPI RTOX GTOX

STOX/ONCO CTOX/ONCO IMMUNO CYTO NEUR

Other (FATE, EXPO, MET, etc.): _____

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Notes:

**THIS IS THE ORIGINAL 8(e) SUBMISSION; PLEASE REFILE AFTER TRIAGE DATABASE ENTRY**

**For Contractor Use Only**

**entire document:** (0) 1 2 **pages** 1,2 **pages** 1,2,3,4

**Notes:**

**Contractor reviewer :** FOR **Date:** 4/3/95

CECATS\TRIAGE TRACKING DBASE ENTRY FORM

CECATS DATA: Submission # 8EHQ-0992-12096 SEQ. A

TYPE: (INT.) SUPP FLWP

SUBMITTER NAME: Union Carbide Corporation

SUB. DATE: 08/27/92 OTS DATE: 09/01/92 CSRAD DATE: 02/15/95

CHEMICAL NAME: Silane 32-61

CAS#: 15188-09-7

INFORMATION REQUESTED: FLWP DATE:
0501 NO INFO REQUESTED
0502 INFO REQUESTED (TECH)
0503 INFO REQUESTED (VOL ACTIONS)
0504 INFO REQUESTED (REPORTING RATIONALE)

DISPOSITION:
(0639) REFER TO CHEMICAL SCREENING
(0678) CAP NOTICE

VOLUNTARY ACTIONS:
(0401) NO ACTION REPORTED
0402 STUDIES PLANNED/UNDERWAY
0403 NOTIFICATION OF WORKERS
0404 LABEL/MSDS CHANGES
0405 PROCESS/HANDLING CHANGES
0406 APP./USE DISCONTINUED
0407 PRODUCTION DISCONTINUED
0408 CONFIDENTIAL

| INFORMATION TYPE: | | P F C |
|---|---|---|
| 0201 | ONCO (HUMAN) | 01 02 04 |
| 0202 | ONCO (ANIMAL) | 01 02 04 |
| 0203 | CELL TRANS (IN VITRO) | 01 02 04 |
| 0204 | MUTA (IN VITRO) | 01 02 04 |
| 0205 | MUTA (IN VIVO) | 01 02 04 |
| 0206 | REPRO/TERATO (HUMAN) | 01 02 04 |
| 0207 | REPRO/TERATO (ANIMAL) | 01 02 04 |
| 0208 | NEURO (HUMAN) | 01 02 04 |
| (0209) | NEURO (ANIMAL) | 01 (02) 04 |
| 0210 | ACUTE TOX. (HUMAN) | 01 02 04 |
| 0211 | CHR. TOX. (HUMAN) | 01 02 04 |
| (0212) | ACUTE TOX. (ANIMAL) | 01 (02) 04 |
| 0213 | SUB ACUTE TOX (ANIMAL) | 01 02 04 |
| 0214 | SUB CHRONIC TOX (ANIMAL) | 01 02 04 |
| 0215 | CHRONIC TOX (ANIMAL) | 01 02 04 |

| INFORMATION TYPE: | | P F C |
|---|---|---|
| 0216 | EPI/CLIN | 01 02 04 |
| 0217 | HUMAN EXPOS (PROD CONTAM) | 01 02 04 |
| 0218 | HUMAN EXPOS (ACCIDENTAL) | 01 02 04 |
| 0219 | HUMAN EXPOS (MONITORING) | 01 02 04 |
| 0220 | ECO/AQUA TOX | 01 02 04 |
| 0221 | ENV. OCCC/REL/FATE | 01 02 04 |
| 0222 | EMER INCI OF ENV CONTAM | 01 02 04 |
| 0223 | RESPONSE REQEST DELAY | 01 02 04 |
| 0224 | PROD/COMP/CHEM ID | 01 02 04 |
| 0225 | REPORTING RATIONALE | 01 02 04 |
| 0226 | CONFIDENTIAL | 01 02 04 |
| 0227 | ALLERG (HUMAN) | 01 02 04 |
| 0228 | ALLERG (ANIMAL) | 01 02 04 |
| 0239 | METAB/PHARMACO (ANIMAL) | 01 02 04 |
| 0240 | METAB/PHARMACO (HUMAN) | 01 02 04 |

| INFORMATION TYPE: | | P F C |
|---|---|---|
| 0241 | IMMUNO (ANIMAL) | 01 02 04 |
| 0242 | IMMUNO (HUMAN) | 01 02 04 |
| 0243 | CHEM/PHYS PROP | 01 02 04 |
| 0244 | CLASTO (IN VITRO) | 01 02 04 |
| 0245 | CLASTO (ANIMAL) | 01 02 04 |
| 0246 | CLASTO (HUMAN) | 01 02 04 |
| 0247 | DNA DAM/REPAIR | 01 02 04 |
| 0248 | PROD/USE/PROC | 01 02 04 |
| 0251 | MSDS | 01 02 04 |
| 0299 | OTHER | |

TRIAGE DATA:

NON-CBI INVENTORY
(YES)
NO
IN TERMINI

ONGOING REVIEW
YES (DROP/REFER)
NO (CONTINUE)
REFER

SPECIES
RAT
RBT

TOXICOLOGICAL CONCERN:
LOW
MED
(HIGH)

USE:

PRODUCTION:

CAS SR

COMMENTS

8(E)-12096A

L/H/H/M/H

ACUTE ORAL TOXICITY IN RATS IS OF LOW CONCERN BASED ON AN LD50 OF 1.87 ML/KG (1870 MG/KG ASSUMING A DENSITY OF 1). DOSAGES (GAVAGE) AND MORTALITY DATA ARE AS FOLLOWS: 1.0 ML/KG (0/5); 2.0 ML/KG (3/5); AND 4.0 ML/KG (5/5). AT 2.0 ML/KG AND ABOVE, CLINICAL SIGNS INCLUDED PROSTRATION AND RUFFLED FUR. PATHOLOGICAL SIGNS INCLUDED CONGESTION OF LUNGS AND ABDOMINAL VISCERA.

ACUTE DERMAL TOXICITY IN RABBITS IS OF HIGH CONCERN BASED ON AN LD50 OF 0.071 ML/KG (71 MG/KG ASSUMING A DENSITY OF 1). DOSAGES AND MORTALITY DATA ARE AS FOLLOWS: 0.05 ML/KG (1/4); AND 0.1 ML/KG (3/4). CLINICAL SIGNS INCLUDED SKIN NECROSIS. PATHOLOGY REVEALED LUNG AND ABDOMINAL VISCERA CONGESTION AND DARK LIVER AND KIDNEYS.

ACUTE INHALATION TOXICITY IN RATS IS OF HIGH CONCERN. TIME OF EXPOSURE TO SATURATED VAPOR AND MORTALITY DATA ARE AS FOLLOWS: 1/4 HOUR (0/6); 1/2 HOUR (5/6); AND 1-HOUR (6/6). TOXIC SIGNS AT EXPOSURES OF 1/4 HOUR AND 1/2 HOUR, INCLUDED ACUTE EYE IRRITATION AND POOR COORDINATION. AT AN EXPOSURE OF 1 HOUR, SIGNS INCLUDED EYE IRRITATION, LACHRYMATION, AND CONVULSIONS. PATHOLOGY IN ANIMALS THAT DIED INCLUDED BLOOD IN INTESTINES AND BROWN LUNGS.

SKIN IRRITATION IN RABBITS IS OF MEDIUM CONCERN BASED AN A GRADE 4 IRRITANT CLASSIFICATION. THE TEST SUBSTANCE WAS APPLIED UNDILUTED TO THE UNCOVERED SKIN OF 5 RABBITS (EXPOSURE TIME WAS NOT INDICATED). MODERATE TO MARKED CAPILLARY INJECTION ON 3 ANIMALS AND MODERATE TO MARKED ERYTHEMA ON 2 OTHERS WAS OBSERVED.

EYE IRRITATION IN RABBITS IS OF HIGH CONCERN DUE TO CORNEAL INJURY CAUSED BY UNDILUTED APPLICATION OF THE TEST SUBSTANCE. A DOSE OF 0.5 ML CAUSED SEVERE CORNEAL INJURY. CLINICAL SIGNS OF TOXICITY INCLUDED ERYTHEMA, PUS, INJECTION AND HEMORRHAGE OF THE LIDS. SEVERE CORNEAL INJURY ALSO RESULTED FROM 0.02 ML, WHEREAS 0.005 ML CAUSED MODERATE CORNEAL INJURY.

ACUTE INTRAPERITONEAL INJECTION IN RATS EXHIBITED AN LD50 OF 1.07 MG/KG. DOSAGES AND MORTALITY DATA ARE AS FOLLOWS: 0.5 ML/KG (0/5); 1.0 ML/KG (2/5); 2.0 ML/KG (5/5). AT 1 ML/KG AND ABOVE, TOXIC SIGNS INCLUDED EXCITABILITY, PROSTRATION AND RAPID BREATHING. PATHOLOGY REVEALED CONGESTION IN LUNGS AND ABDOMINAL VISCERA.